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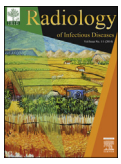

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Statistic research article

Literature analysis of radiological studies on Hand, foot and mouth disease

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Abstract

A statistic analysis based on the available literatures from the year 1972 to 2014 was carried out by cooperating with Elsevier Solution Consultants, in order to learn the radiological research tendency and find out the radiological research direction of Hand, foot and mouth disease. A general summary was analyzed, including the literature quantity, the literature type, the geographic distributions and journal distributions of literatures on radiology of Hand, foot and mouth disease. Such prompting statistic would definitely enable revealing the radiological research on the Hand, foot and mouth disease, enrich the corresponding theoretical connotation and guide the clinical practice.

Keywords: Radiology; Hand, foot and mouth disease; Literature analysis

1. Introduction

Hand, foot and mouth disease (HFMD) is a common childhood infectious disease that typically presents as vesicular exanthema of the oral mucosa and peripheral extremities [1]. Enteroviruses, such as Coxsackievirus A6, A16 and Enterovirus A71, are the most common etiological agents [2]. HFMD is typically characterized by a brief febrile illness, typical vesicular rashes on the palms, soles, or buttocks, and oropharyngeal ulcers. In some cases, patients may also develop neurological complications, such as encephalomyelitis, aseptic meningitis, and acute flaccid paralysis [3,4].

Signs and symptoms normally appear 3–6 days after exposure to the etiological agents [5]. Generally, the rash goes away itself in about one week, and most cases require no treatment other than symptomatic relief. Till now, there is nearly no antiviral treatment or vaccine available for HFMD, but development efforts are underway. A diagnosis usually can be made by the presenting signs and symptoms alone. Furthermore, a throat swab or stool specimen may be taken to identify the virus by culture [6]. Radiological examinations are an assistant means for diagnosis of HFMD, especially for patients with neurological complications [7,8].

To better understand the radiological research status of Hand, foot and mouth disease, and to better grasp the research direction, we intensively investigated the previous radiological studies on Hand, foot and mouth disease, under the collaboration with Elsevier Solution Consultants.

2. Distributions of literatures on radiology of Hand, foot and mouth disease

All the available radiological literatures related to radiology in the research literature on Hand, foot and mouth disease, from 1972 to 2014, were retrieved and analyzed by cooperating with Elsevier Solution Consultants. The drawing of literature quantity versus time is shown in Fig. 1. It can be seen that, from 1972 to 2014, there are about 125 papers published on radiology of Hand, foot and mouth disease, with a general rising tendency year by year except for 2013 and 2014. And in 2012, the annual published number reached to the top of 21.

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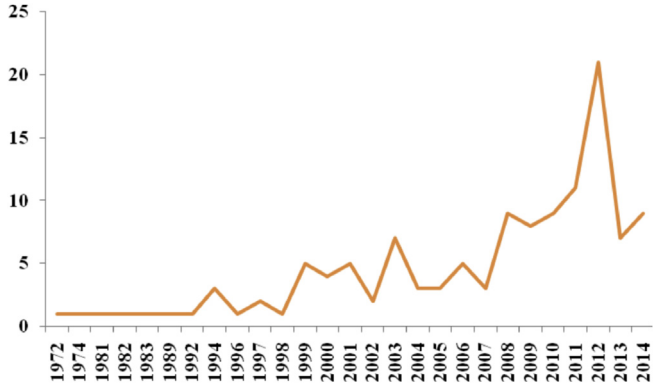

Fig. 1. The quantity of radiological literature on Hand, foot and mouth disease.

Fig. 2 shows the literatures' types. It can be seen that about 84% are research articles, 9.6% are reviews, 3.2% are letters, and the rest are conference papers, essays, etc.

Fig. 3 shows an overview of the literatures' geographic distributions and the countries whose numbers of the published literatures being top 20 are listed. It is noted that most of the literatures (about 23.6%) on radiology of Hand, foot and mouth disease are published by the United States, followed by P.R. China and Taiwan (China). The total numbers of the literatures from the three regions are close to 32.8% of all the literatures.

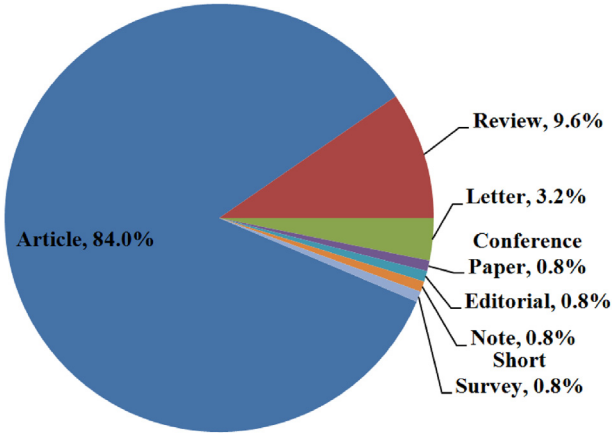

Fig. 2. The radiological literature type on Hand, foot and mouth disease.

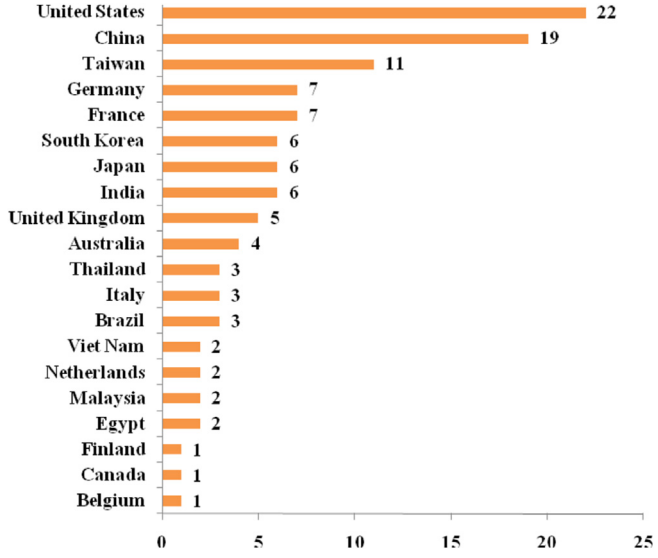

Fig. 3. The geographic distributions of the radiological literatures on Hand, foot and mouth disease.

Table 1
The distributions about the major institutions.

Institution	Country	Quantity
Hainan Provincial People's Hospital	China	5
Triservice General Hospital Taiwan	Taiwan	3
China Medical University Hospital Taichung	China	3
Guangzhou Women and Children's Medical Center	China	2
Academic Medical Centre, University of Amsterdam	Netherlands	2
Ohio State University	United States	2
University of Pennsylvania, School of Medicine	United States	2
Chang Gung Children's Hospital	China	2
Kyoto University	Japan	2
Mahidol University	Thailand	2
University of Texas M. D. Anderson Cancer Center	United States	2
Seoul National University Hospital	South Korea	2
Centers for Disease Control and Prevention	United States	2
Sumitomo Hospital	Japan	2
Princess Margaret Hospital for Children	Australia	2
National Institute of Infectious Diseases	Japan	2
Ulsan University	South Korea	2
National Cheng Kung University Hospital	Japan	2
Beijing Ditan Hospital	China	2
Otsu Red Cross Hospital	Japan	2

Table 1 shows the distributions about the major institutions of the above literatures (mainly the top 20). The numbers of the listed literatures in the table are 45, accounting for 36% of the total number. It can be seen that several institutions from China played a leading role on the published quantity of radiology of Hand, foot and mouth disease.

Table 2 summarizes the journal distributions of the radiological literatures on Hand, foot and mouth disease.

Table 2
Journal distributions of the literatures.

Journals	Contribution quantities
Chinese Journal of Radiology	4
BMJ Case Reports	4
Neuroradiology	4
Clinical Infectious Diseases	3
American Journal of Neuroradiology	3
Indian Journal of Dermatology Venereology and Leprology	3
Emerging Infectious Diseases	3
Zhonghua Er Ke Za Zhi Chinese Journal of Pediatrics	3
Clinical Dysmorphology	2
Chinese Journal of Contemporary Pediatrics	2
Chinese Journal of Medical Imaging Technology	2
American Journal of Medical Genetics Part A	2
Journal of Clinical Endocrinology and Metabolism	2
Journal of Clinical Oncology	2
New England Journal of Medicine	2

Table 3
The top 6 authors' informations.

Authors	Contribution quantities	Address	E-mail
Shah, M. H.	2	A438 Starling-Loving Hall, 320 W 10th Ave, Columbus, OH 43210, United States	manisha.shah@osumc.edu
Li, J.	2	Department of Radiology, People's Hospital of Hainan Province, 19 Xiuhua Road, Xiuying District, Haikou, Hainan Province, China	cjr.lijianjun@vip.163.com

Apparently, most the papers were primarily published in journals related to radiology or neuroradiology. However, the number of published papers in each journal was relatively less, with the most of 4 papers published in the journal 'Chinese Journal of Radiology'.

According to our data, the corresponding authors who contributed more radiological papers on Hand, foot and mouth disease are summarized. And the top 6 authors are listed in Table 3. Obviously, all the 6 authors have published more than 10 papers, with the most of 20 papers by Kudo, M. from Japan.

3. Summary

Based on the above analysis, we know that not more attention was paid to the radiological research on Hand, foot and mouth disease. Only several or tens of papers were published each year. Some countries, such as US and China, give the relatively leading focus on the radiological research on Hand, foot and mouth disease. Most the current radiological papers were primarily published in journals related to radiology or neuroradiology, with some published in clinical journals. However, the number of published papers in each journal was relatively less.

In summary, such prompting statistic would definitely facilitate to reveal the radiological findings and research tendency on Hand, foot and mouth disease. Therefore, the corresponding theoretical connotation can be enriched and fully developed to indicate the radiological research direction, guide clinical practice and improve the radiology based diagnostic level of Hand, foot and mouth disease.

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